administration from Westminster College in Pennsylvania.

Says Scheller, the industry outlook for circulars calls for somewhat slower growth, in the range of 6%, in 1990 and 1991.

Revenues from the March 1988 acquisition of five plants of the Beddor Companies boosted by 74% the total 1988 sales of the Banta Corporation, Menasha, Wis., to $526 million and 10th position. The diversified printer produces commercial work, books, publications, catalogs, direct marketing materials, and graphic services.

On July 1, Banta obtained a new CEO. He is Calvin W. Aurand Jr., who had joined the company as president March 1. He replaces Harry W. Earle, who had been president and CEO for 10 years. Aurand previously headed up American Bank Note, Chas. P. Young, and Stecher-Traung-Schmidt, and earlier served with Bemis Company.

Occupying the #11 spot with $516 million in 1988 sales is Arcata Graphics, Baltimore, Md. The book, publication, and general commercial printer operates nine printing sites, including four in Tennessee and one each in California, Pennsylvania, West Virginia, New York, and Massachusetts. This spring, Arcata announced the start of construction on a $66 million book plant in West Virginia.

Robert L. Swam, 48, who joined the firm in January 1985, is president and CEO.

Fiscal 1989 was a record year for Western Publishing, Racine, Wis., with sales jumping more than 20% enroute to a total of $470 million and the #12 spot. The 81-year-old firm is America's leading publisher of children's books under its renowned Golden Book name, and is a major producer and marketer of puzzles, games, and special-interest books for adults. Its three plants supply commercial printing and ancillary services to business and government.

Western Publishing reports tremendous growth in the proprietary adult and juvenile game market, such as Pictionary, Outburst, and Girl Talk, as well as increased business in new retail channels.

Its diversified products division has concentrated its efforts on printing one- and two-color catalogs and trade books, educational kits, manuals for software users, games, baseball and playing cards, as promotional products. It is continuing its shift away from low-margin, highly competitive print markets toward commercial printing opportunities that offer higher margins associated with value-added services.

This year, Richard A. Bernstein, 43, took over the titles of chairman, president, and CEO from Joseph A. Marino, who announced his retirement. Bernstein has a bachelor's degree in economics from New York University.

Gaining the #13 spot on the GAM 101 list with sales of $455 million, converted from Canadian, is Southam Printing, Toronto. The 108-year-old, privately-held firm operates 18 printing sites and employs 3,800.

Michael A. Quinn, 48, continues as president and CEO.

Meredith / Burda, Des Moines, Iowa, operates seven printing sites, employs 3,200, and grossed $453 million in the most recent fiscal year for #14 position on the list. It is a joint venture of Meredith Corporation and Burda Investments in Germany.

President Walter Voss, 61, joined Meredith in 1957.

Valassis Inserts, Livonia, Mich., posted sales of $400 million for the second straight year, and now holds the #15 spot. Its plants in Livonia, Durham, N.C., and Wichita, Kans., produce freestanding inserts for newspapers, coupons, and commercial work.

In July 1989, David A. Brandon took over as president and CEO, responsible for strategic planning and the day-to-day management of the firm. He is a graduate of the University of Michigan and joined Valassis in 1979.

The former CEO, Larry L. Johnson, 37, has been promoted to president and CEO of Consolidated Press U.S., the Australian-based company that acquired Valassis in 1986.

Brown Printing, Waseca, Minn., reported fiscal 1989 sales of $365 million for the #16 position. The 41-year-old company produces publications, catalogs, flyers, and inserts, operating a total of 241 heatset and nonheatset web offset press units and 30 gravure units. Its parent company is Gruner + Jahr, Hamburg, Germany.

James K. Rifenbergh, 58, continues as president and CEO.

Taylor Corporation, North Mankato, Minn., is a private, closely-held holding company for 30 diverse and autonomous operations, ranging from trade thermography and color separa-

tion work to sheetfed and web offset commercial printing and envelope converting. It employs a total of 5,000. According to one source, it had sales of approximately $360 million, for the #17 spot on the GAM 101 list. Subsequent information revealed that sales in excess of $250 million is a more accurate estimate.

Glenn Taylor heads up the 14-year-old firm.

Because of the sale of its Quad/Marketing newspaper-coupon operation to the Murdoch organization, Quad/Graphics reported reduced sales, $350 million in the current year, down from $415 million, for the #18 position.

Quad has announced it purchased a site in Hartford, Wis., where it will start construction next year of a fifth printing plant. Initial plans are to accommodate 24 web offset press lines, but there is a provision to add rotogravure later.

Quad/Graphics now operates plants in Wisconsin—Pewaukee, Lomira, and Sussex—and in Saratoga Springs, N.Y.

Meanwhile, Quad is involved in a research project to develop three-dimensional printing using a thin lenticular-screen lamination rather than separate viewing glasses for the effect.

Harry V. Quadracci continues as president and CEO of the firm he founded in 1971.

A major check printer, John H. Harland Company, Atlanta, posted sales of $333 million in fiscal 1988, good enough for the #19 slot. In 42 nationwide sites, it operates 155 sheetfed offset press units, 175 sheetfed letterpress units, and 48 web offset press units.

Chairman and CEO is J. William Robinson, 69, who has been with the firm for 39 years.

A revenue boost of about 27% is being reported by Trans-Continental Printing, Saint-Laurent, Quebec, a 13-year-old public company specializing in freestanding inserts. Converted from Canadian currency, its sales now stand at $292 million for #20 on the list.

It describes itself as a low-cost producer with a dozen plants strategically located across Canada and the U.S., equipped with state-of-the-art machinery. It employs 2,500.

CEO Cam Gentile, who holds a bachelor's degree in engineering, joined the company as president in 1987. He has 22 years of senior management experience in the pulp, paper, packaging, and printing industries.

According to a Trans-Continental spokesperson, the freestanding insert industry is reaching the maturity phase, which will force the industry to rationalize and be more cost-effective in order to reduce the effect of eroding margins.

For Continental Graphics Holdings, double-digit sales growth from fiscal 1988 to fiscal 1989 marks its first full year as a private company following a buyout. Sales for the Los Angeles-based firm now stand at $291 million, #21 on the GAM 101 list.

It employs 3,815 and operates nine plants: four in the LA area, two in San Diego, and one each in San Bernardino, Calif., Portland, Ore., and Charlotte, N.C. Its sub-

In July, David A. Brandon became head of Valassis Inserts. Among his previous accomplishments there: "Make It Happen Day," a program setting annual personal and departmental objectives all in one day.

Benyas-Kaufman/Black Star

sidiaries include such well-known names as Arts & Crafts Press, Franklin Press, Graphic Arts Center, and Rush Press.

Curtis F. Bourland, 61, continues as chairman, president, and CEO.

Graphic Industries, Atlanta, continues to expand at a rapid pace through acquisitions and new business. Fiscal 1989 saw sales swell 21% to $270 million, #22 on the list, and member companies grow from 33 to 40, a count that includes printing companies and blueprint and reprographics firms.

Among the most recognizable firms in the network: W.E. Andrews, Hoechstetter, Mercury, Stein, Tower Printing, Williams Printing, and State Printing.

Appointed president in 1955, Mark C. Pope III, 64, now holds the titles of chairman and CEO.

Mark C. Pope III began his graphic arts career in 1949 with Williams Printing Co., the predecessor firm of Graphic Industries, of which he is now chairman and CEO.

Ringier America is the new name chosen by the Swiss company Ringier AG for the combined operations resulting from its purchase in March for $550 million of W.A. Krueger Company, plus their joint venture, Krueger Ringier.

In fiscal 1988, Krueger Ringier alone posted sales of $237 million for #23 spot. However, if combined with $378 million reported by the W.A. Krueger unit, total sales would amount to $615 million, which would push Ringier America far up on the list. Altogether, the unified company would be composed of 12 printing sites and 5,900 employees.

By the end of September, Krueger's headquarters in Scottsdale, Ariz., will be closed down and consolidated into Ringier America headquarters in Itasca, Ill.

Ringier AG, based in Zurich, is a global operation; counting all activities, sales exceed $1 billion, with 9,000 employees worldwide.

Edward C. Nytko joined W.F. Hall Printing Co., the firm that provided the basis for Krueger Ringier, in 1965. He continues as president and CEO of Ringier America, Itasca, Ill.

Foote & Davies is, at this writing, an unfinished story. On June 19, 1989, Alden Press, Elk Grove Village, Ill., signed a letter of intent to acquire the Atlanta commercial and publication printer, which posted 1988 sales of $196 million. The final contract has not been signed yet.

Privately-held Foote & Davies, which traces its origins to 1887, operates plants in Atlanta and Lincoln, Neb.

Alvan A. Herring holds the title of CEO.

Holding down the #25 spot, with 1988 sales of $161 million, a 10% gain over 1987, is Perry Printing, a privately-held company based in Waterloo, Wis. The firm belongs to Journal Communications.

Roger L. Perry continues as chairman and CEO.

Editor's Note: For production reasons, copy for the GAM 101 gatefold had to be compiled early. Since then, new information has emerged or become available, which was impossible to include in the main list.

Neither W.A. Krueger Company, which was bought by Ringier in March, nor its revenues appear on the list, the result of a misunderstanding. Revenues given for Ringier America include only those for Krueger Ringer, the portion of the firm that had been a joint venture between Ringier and W.A. Krueger. In fiscal 1988, W.A. Krueger had gross revenues of $378 million. Henceforth, Ringier America should be considered a single unified company that includes the revenues, employees, and assets of W.A. Krueger and Krueger Ringier.

Also, Graphisphere, Des Plaines, Ill., a privately-held, 700-employee commercial printer encompassing Bradley Printing, The Paper Express, and Midwest Litho Arts, does not appear but should. Its fiscal 1988 sales amounted to $110 million, up 12% from $98 million. Gary R. Dorn is CEO.

GAM regrets these omissions and any others, and again urges all participants to be prompt and accurate in their responses.

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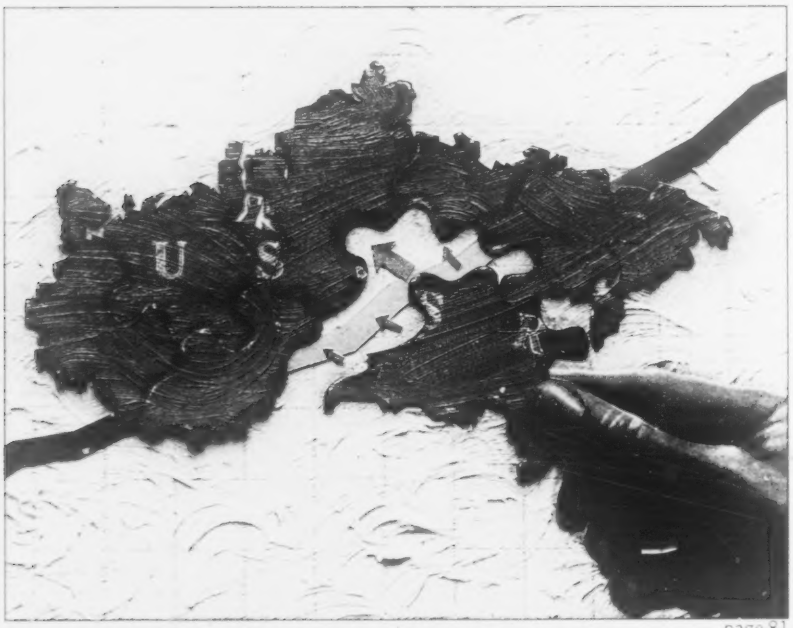

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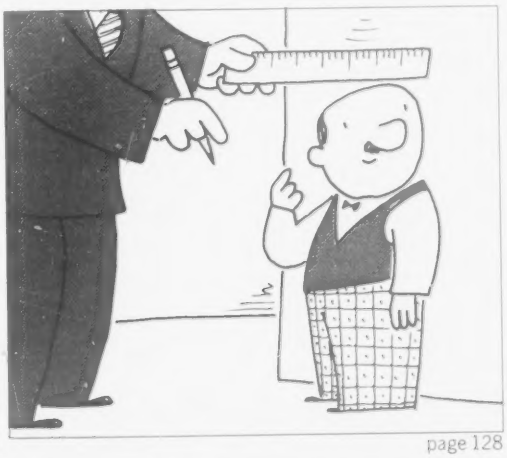

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A Look At The Consensus Forecasts

Although the economy has turned to a slower growth mode, a robust level of economic activity still remains. Real gross national product, the nation's output of goods and services, grew an annualized 2.5% or $25.6 billion in third quarter 1989, on par with the second quarter of that year.

Our outlook calls for an extended, gradual downturn that is expected to continue through mid-1990. Cahners Economics had forecast the third quarter of 1989 to be the slowest quarter of economic growth for this business cycle. However, because of the strong third quarter, we have since revised our forecast, producing a higher growth rate in 1989 and a lower growth rate this year. Expect GNP to rise 2.9% in 1989 and 2.1% in 1990.

The Blue Chip Consensus (Sedona, Ariz.), a monthly survey of more than 50 U.S. economists, is forecasting GNP to rise a sluggish 1.8% in 1990. According to the October survey, the outlook for 1990 represents the lowest projected rate of economic growth made by the panel members since the recession forecast for early 1982.

However, most on the panel do not expect 1990 to be a year of disaster. The forecasts range from a high of 3.1% to a low of -1.3%. Cahners' GNP forecast ranked in the top third of the group. The consensus reported that industrial production, another key economic factor, will rise an average of 1.7% in 1990, the same as Cahners' forecast.

Several indicators point to a soft landing next year. For the consumer, Cahners Economics expects inflation to remain low, with the consumer price index forecast to rise only 3.8% in 1990. The unemployment rate will also stay down, averaging 5.5% next year.

Interest rates are expected to decline into 1990, with three-month Treasury bills averaging 6.3% during the year. On the business side, we project business investment to increase only 1.4%, while corporate profits will climb 4.4% in 1990.

Hourly wages in the printing and publishing industry reached $11.04 in September 1989, up 3.2% since the end of 1988. Wages in printing and publishing are, on average, slightly higher than wages in all other manufacturing industries. On a regional basis, all manufacturing hourly earnings (including printing and publishing) are highest in the Midwest, where the manufacturing economy is located. Wages are also higher than the national average in the Northeast because of the need to attract workers in a tight labor market.

PRINTING INDUSTRY SUPPLY INDICATORS

				Annual Percent Change			
Employment	**Sep 88**	**Aug 89**	**Sep 89**	**1988**	**1989**	**1990**	**1991**
Printing and publishing (1)	1566.7	1606.3	1605.5	3.6	3.1	2.1	3.9
Commercial printing (1)	568.6	571.5	574.1	5.0	3.5	2.6	4.1
Productivity							
Printing and publishing (2)	149.5	160.9	158.9	3.1	6.9	3.0	2.3
Average Hourly Earnings							
Printing and publishing (3)	10.7	10.9	11.0	3.4	3.2	2.8	2.9
Commercial printing (3)	11.0	11.2	11.4	2.1	3.3	3.1	2.9
Paper shipments							
Coated paper (4)	6960	6820	na	2.3	-3.1	3.4	9.8
Uncoated groundwood (4)	1410	1510	na	7.4	10.3	2.3	0.1
Uncoated free sheet (4)	9670	9900	na	3.0	2.8	1.7	0.8
Graphic Arts Machinery	**Q2/88**	**Q1/89**	**Q2/89**	**1988**	**1989**	**1990**	**1991**
New orders (5)	133.7	153.3	130.1	4.8	1.3	18.0	2.8
Shipments (5)	163.8	162.6	172.5	26.8	4.8	3.0	10.9
Graphic Arts Supplies							
Shipments (5)	140.9	141.8	153.3	6.5	6.2	2.4	6.0

(1) Thousands of persons; U.S. Department of Labor. (2) Index 1967 = 100; Cahners Economics. (3) Dollars per hour; U.S. Department of Labor. (4) Thousands of tons; American Paper Institute. (5) Index 1982 = 100; National Printing Equipment and Supply Association; Arthur Andersen and Co.; Cahners Economics.

Up Close & Personal

The new decade deserves a new look. GAM's series for 1990 examines the industry.

In recent years GAM has studied the graphic arts industry from a lot of angles. We've run year-long series on aspects of business management (1988), on specific market segments (1985), on products for the industry (1987), on people in various jobs and what they do (1986), and on some of the difficult and controversial issues the industry faces (1989).

Now we begin a new decade. (Theoretically it begins in 1991, but for most of us, a decade starts when that right-hand digit clicks over to zero.) One standard journalistic response to a year that ends in zero is the retrospective, and this year news magazines and television specials will be jammed with images of incurable diseases, terrorists, Republicans, and other newsmakers of the 1980s. Those of you who haven't already had enough of them will love it.

The other standard response is the Peek Into the Future. Since the decade now on us will bring to an end not only itself but the 20th Century and the millennium as well, we can expect 10 years of increasingly pompous guff about the Meaning Of It All.

In fact, since January is traditionally a sporting month (see page 42 for Printing for the Super Bowl), I'll make a little bet with you. Here are two words not in current vernacular use. If they haven't both become common in newspaper editorials and columns by 1999, I'll lay a hundred dollars on the first bona fide GAM subscriber who tracks me down and reminds me of it. The two words are millenarianism and eschatology. Become familiar with them. Prepare yourself for the cocktail parties of the late '90s. And remember, you heard it here first.

Meanwhile, we've all got a business to run. Instead of looking forward or looking back, we thought it would be useful to take a detailed look at where we are right now. Yes, there have been enormous changes; and yeah, all right, there are going to be some more. But what's going on *now?*

Since we cover the North American printing industry, it seemed reasonable to take it, region by region, and look in considerable detail at the industry in 1990. We're calling this series, which will run monthly all year, the Geography of Print.

We begin with the United States as a whole. Why not all of North America? Because most of the institutions and organizations from whom we obtain data for this project have devoted a lot of time, energy, and money to measuring the U.S. industry as a more or less self-contained unit. Because it is far and away the largest single printing market in the world. And because most of our readers are interested in information specifically about it.

Following January we will look in turn at U.S. regional markets (see facing gatefold for a list), followed by Canada and Mexico.

Each installment will be in the handy eight-page, double-gatefold format you see facing this page. (Or maybe you don't see it, in which case you can contact GAM Reprint sales, 249 W. 17th St., New York, NY 10011.) By the time it's over we'll have looked at printing from Cozumel to Medicine Hat. We're looking forward to it, and we hope you'll enjoy the trip with us.

graphic
arts
monthly

The Geography Of Print

The printing industry in the United States is the world's largest single print market in terms of value added, demand and consumption of products, and number of operating plants.

It is also large in comparison with other American manufacturing industries. With 1989 sales of $73.4 billion and more than 800,000 employees, U.S. printing is:

—largest in number of manufacturing sites, 51,617 to be exact;

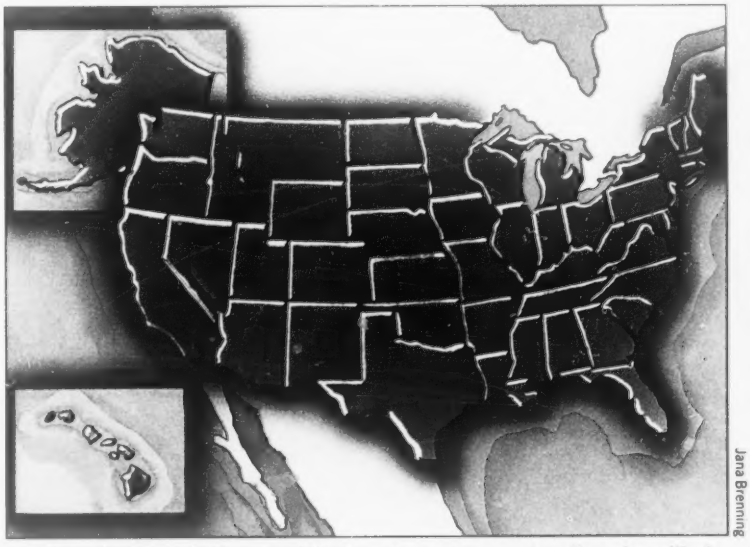
—second only to automobiles in number of employees; and

—growing in employment faster than computers, outpaced only by plastic products and aircraft.

In addition to size, the industry is strong, stable, and diversified. Over the past 15 years, growth in industry sales has outpaced the Gross National Product by about 30%.

As we will see during the course of this year's series on the Geography of Print, it is also very much a regional market. Printing is the most geographically dispersed manufacturing sector. There are fewer than 1,000 printing employees in only five states, while in all but a dozen, commercial printing ranks among the top 10 manufacturing industries.

This dispersal is one factor contributing to the industry's relatively low profile. There is not one but a number of printing industries; it is at once national (long-run web processes), regional (medium-size commercial companies), and local (thousands of small shops).



Jana Brenning

One asset of printing that is under-recognized is the diverse nature of its plants and their primary products. While three-fifths of the industry falls under the heading of general commercial printing, the remainder is an array of specialized shops of all sizes that cushions ups and downs in specific areas. It is this size and market spread serving basic print buyer needs that gives printing its broad and stable base.

Also, while geographic characteristics can change somewhat because of mobility and localized labor shortages, regionalism is still the rule. For now, however, we are considering the nation's industry as a whole: what it is, how it stands, and how it is changing.

Data for this report are taken from a wide variety of sources. The editors would particularly like to thank Printing Industries of America, the National Association of Printers and Lithographers, the U.S. Department of Commerce, A.F. Lewis and Associates, Aktrin Research Institute, the National Printing Equipment and Supply Association, and Cahners Economics.

Reprints of this installation of the Geography of Print may be ordered from Holly Hoffman, GAM, 249 W. 17th St., New York, NY 10011.

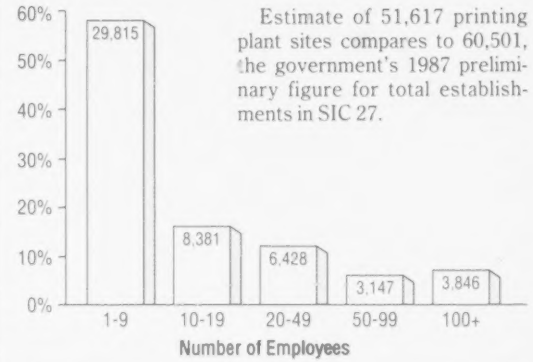
By Peter Johnston
Special Projects Manager

Industry at a Glance

Value of Shipments

In the United States, gross sales of all printing—also known as value of shipments, as compiled by the U.S. Bureau of the Census and other sources—reached $73.39 billion in 1989 and is projected to rise to $77.58 billion in 1990. The bureau conducts economic censuses of retail trade, wholesale trade, service, construction, mineral, and manufacturing. Printing, along with publishing, can be found under the manufacturing category. Data collected include number of establishments and companies, the value of shipments, employment, payrolls, workers' hours, inventories, cost of materials, and utilities. While the bureau's data base is far from perfect, it stands alone in its scope; most industry market research is at least partly based on these statistics.

Plants by Employee Count



Estimate of 51,617 printing plant sites compares to 60,501, the government's 1987 preliminary figure for total establishments in SIC 27.

Charts and graphs by Lisa Hilgers

Print Portion of SIC 27

Printing, in terms of value of shipments, comprises almost exactly half of Standard Industrial Classification 27, Printing & Publishing. Economic censuses are authorized to be conducted every five years for the years ending in 2 and 7. In actuality, however, the economic impact of printing is felt in many other areas, too, from paper and ink shipments to printing trades machinery, magnetic and optical recording media, and photographic equipment and supplies. Vast amounts of data on these areas are collected by the government.

Within SIC 27, publishing is composed of five segments: newspapers, periodicals, books, miscellaneous, and greeting cards. Printing is broken into seven segments: commercial printing, business forms, book printing, book binding, blankbooks/binders, engraving/platemaking, and trade services.

As can be seen from the wide disparity in size of the seven segments, there are certain problems with dividing the industry that way. When examining regions individually, we will include markets representative of today's industry and make at least some attempt to unbundle the huge commercial printing segment.

Dominated by Commercial Printing

As is apparent, far and away the largest segment of the U.S. printing industry is commercial printing. One reason for that—and also for the difficulties inherent in nailing down just exactly what commercial printing is—has to do with the structure of the industry itself. More than any other major manufacturing industry—more even than computers, and this in an age when every other garage seems to hold a computer factory—printing is fragmented.

The industry leader, R.R. Donnelley & Sons Co., holds less than a 4% share of the market. This is part of the industry's invisibility; there is no single firm with the public presence of, say, Boeing or Exxon or Chrysler. (Another factor, of course, is the traditional reticence of private small-company owners. Even of the 500 largest printers in the U.S., only 18% are publicly held. Some 8% are privately held, and 2%—10 companies—are owned by their employees.)

Ours is a large industry made up of very small entities; a typical printing company in the United States is a privately held commercial printer with 15 employees and annual sales of around $900,000.

These small companies have historically been, and still largely are, what are known as job shops. What they print is determined by the jobs they happen to have in house at any given time, and the aggregate of all those jobs constitutes "general commercial printing." Perhaps the best way to define it is negatively; if you take out magazines, catalogs, inserts, business forms, financial printing, prepress, packaging, and the other easily identified categories, what you have left is commercial printing.

And there's a lot of it. As illustrated in the accompanying graphics, commercial printing constitutes more than 68% of total industry sales, or some $53.2 billion. Some of the more specialized kinds of printing tend to be geographically localized; financial printing is largely confined to New York City, for instance, and the big bulk of long-run magazine printers are either in the Northeast or the Midwest. Commercial printing, by contrast, especially the small-shop kind of commercial printing that makes up the bulk of the business, is pretty well distributed with the population.

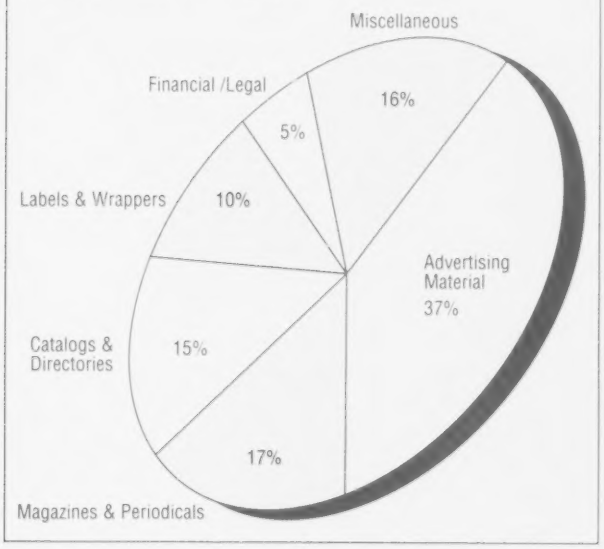
The commercial sector is also one of the most vigorous areas in today's printing industry. In the 10 years between 1976 and 1986, the commercial printing segment grew from 356,035 employees to 518,563, an increase of 46%. In unadjusted dollars, payroll grew 158%, from $4.37 billion to $11.29 billion.

Printing in the U.S.

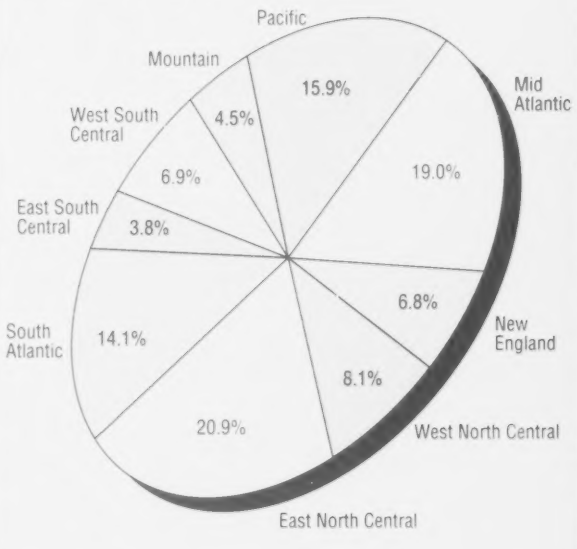
Print Market Segments

Segment	$ Millions 1990 Sales	% Share
Commercial Printing	$53,186	68.5
Business Forms	10,058	13.0
Book Printing	4,258	5.5
Book Binding	1,133	1.5
Blank Books/Binders	3,541	4.6
Engraving/Platemaking	3,440	4.4
Trade Services	1,964	2.5
TOTAL	**$77,580**	**100%**

Share by Product Category



Plant Sites by Region



Key: **New England** (3,574 plant sites): Connecticut, Maine, Massachussets, New Hampshire, Rhode Island, Vermont. **Mid-Atlantic** (9,826): New Jersey, New York, Pennsylvania. **East North Central** (10,761): Illinois, Indiana, Michigan, Ohio, Wisconsin. **West North Central** (4,166): Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota. **South Atlantic** (7,266): Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, Washington D.C., West Virginia. **East South Central** (1,973): Alabama, Kentucky, Mississippi, Tennessee. **West South Central** (3,543): Arkansas, Louisiana, Oklahoma, Texas. **Mountain** (2,316): Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming. **Pacific** (8,192): Alaska, California, Hawaii, Oregon, Washington.

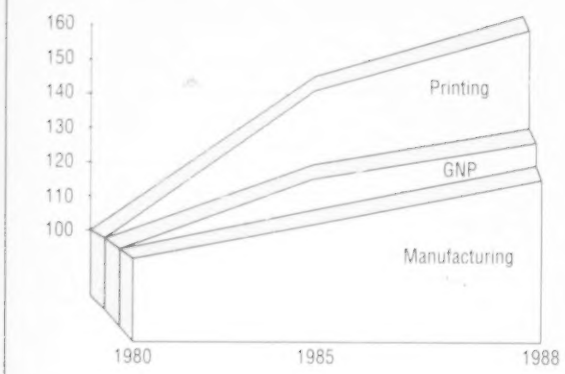
Equipment Distribution by Region

REGIONS	COLOR SCANNERS		SHEETFED PRESSES		WEB OFFSET W/DRYERS		FOLDERS	
	Scanners in Region	Percent of total U.S.	Presses in Region	Percent of total U.S.	Presses in Region	Percent of total U.S.	Folders in Region	Percent of total U.S.
New England	208	8.0%	2,525	6.8%	262	6.9%	2,144	6.9%
Mid-Atlantic	537	20.6	6,831	18.4	801	21.0	5,448	17.6
East North Central	530	20.3	7,867	21.2	847	22.2	6,609	21.3
West North Central	207	7.9	3,088	8.3	345	9.0	2,628	8.5
South Atlantic	401	15.4	5,291	14.2	539	14.2	4,574	14.7
East South Central	110	4.2	1,503	4.0	150	4.0	1,293	4.2
West South Central	146	5.6	2,649	7.1	236	6.2	2,282	7.4
Mountain	116	4.5	1,707	4.6	134	3.5	1,478	4.8
Pacific	351	13.5	5,702	15.4	493	13.0	4,521	14.6
TOTAL U.S.	**2,606**	**100.0**	**37,163**	**100.0**	**3,807**	**100.0**	**30,977**	**100.0**

(Plant sites reporting at least one installation; multiples not indicated.)

A Growth Industry

Healthy Output Gains



Investment & Productivity

In recent years in the printing industry, direct wage costs as a percentage of sales have been steadily dropping. In 1975, the figure stood at 21%, while in 1988 it had experienced a 19% drop, to 17% of overall sales. In the same period, average hourly wages in the field doubled, to $10.65; in late 1989 average hourly wages topped $11 for the first time.

In the 10 years up to 1989, the printing industry invested a total of $16 billion in new plant and equipment, which has had a proportionate impact on direct wage costs. In other words, increased investment in new technology has spurred employee productivity in the industry.

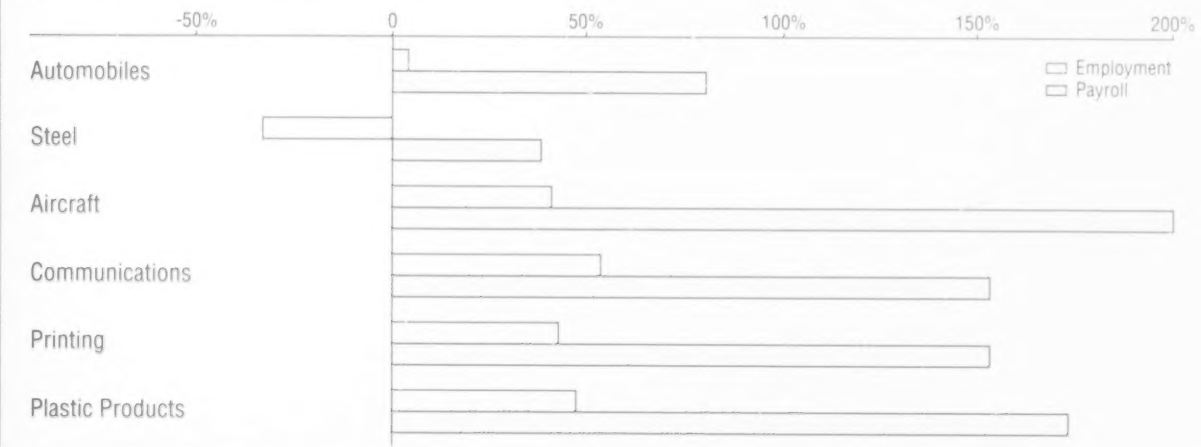
Because so much of the printing industry is tied directly to the local and regional economies, variations in direct wage costs and average hourly wages are bound to occur.

Increases in Employment

Printing is rapidly becoming one of the nation's chief providers of new jobs. Between 1982 and 1988, industry employment grew 20%, about 10 times the national average for manufacturing. Figures are in thousands.

	1976	1981	1986
Automobiles	783.9	709.2	752.4
Printing	524.4	637.4	747.0
Communications	439.4	565.8	673.0
Aircraft	417.3	583.7	587.6
Plastics Products	388.4	493.4	571.8
Steel	533.4	495.5	356.0

Strong Among the Manufacturing Industries



Payroll Keeps Pace

When it comes to the amount of money paid to employees, the printing industry holds its own against the largest industries in the manufacturing sector of the economy. Figures are in billions of unadjusted dollars.

	1976	1981	1986
Automobiles	$13.08	$16.98	$23.57
Printing	6.43	11.00	16.26
Communications	6.17	12.24	19.87
Aircraft	6.70	14.97	20.30
Plastics Products	4.04	7.47	11.05
Steel	9.22	13.62	12.72

Healthy Prospects

1990 Outlook by State

Estimate of print market size, with projected growth rate.

NEW ENGLAND
Connecticut $1,383 million (4.8%)
Maine $189 million (6.2%)
Massachussets $2,695 million (5.4%)
New Hampshire $462 million (7.2%)
Rhode Island $361 million (5.3%)
Vermont $338 million (5.6%)

MID-ATLANTIC
New Jersey $3,531 million (5.9%)
New York $6,332 million (4.8%)
Pennsylvania $4,600 million (5.5%)

EAST NORTH CENTRAL
Illinois $6,250 million (5.2%)
Indiana $2,071 million (5.2%)
Michigan $2,012 million (5.2%)
Ohio $4,206 million (5.3%)
Wisconsin $2,551 million (5.5%)

WEST NORTH CENTRAL
Iowa $959 million (5.6%)
Kansas $1,040 million (5.6%)
Minnesota $2,422 million (5.7%)
Missouri $1,909 million (5.0%)
Nebraska $427 million (5.2%)
North Dakota $72 million (5.9%)
South Dakota $88 million (4.8%)

SOUTH ATLANTIC
Delaware $129 million (6.6%)
Florida $2,702 million (6.8%)
Georgia $2,157 million (7.6%)
Maryland $1,808 million (6.0%)
North Carolina $1,704 million (6.9%)
South Carolina $618 million (6.7%)
Virginia $1,942 million (6.2%)
Washington, D.C. $233 million (5.4%)
West Virginia $215 million (4.4%)

EAST SOUTH CENTRAL
Alabama $752 million (5.5%)
Kentucky $1,163 million (5.3%)
Mississippi $404 million (6.9%)
Tennessee $1,907 million (5.3%)

WEST SOUTH CENTRAL
Arkansas $461 million (4.2%)
Louisiana $528 million (8.0%)
Oklahoma $511 million (6.0%)
Texas $3,998 million (5.2%)

MOUNTAIN
Arizona $768 million (7.6%)
Colorado $816 million (7.1%)
Idaho $184 million (5.8%)
Montana $77 million (5.5%)
Nevada $261 million (7.4%)
New Mexico $144 million (5.1%)
Utah $432 million (5.9%)
Wyoming $33 million (6.5%)

PACIFIC
Alaska $33 million (6.5%)
California $7,918 million (6.4%)
Hawaii $116 million (5.5%)
Oregon $740 million (5.9%)
Washington $891 million (6.0%)

Print in Perspective

While the healthy nature of printing is clearly evident in the preceding pages, the industry's innate strengths should not be overlooked. Print serves the most basic needs of a literate, consumer-based, and information-hungry population, supplying products for business as well as leisure and education.

It has a very wide base—most number of sites in its sector of the economy, most geographically dispersed manufacturing industry—and consists almost entirely of small businesses.

Its base is also stable because its products are so diversified and because its small-plant nature is not often buffeted by mergers and takeovers nor by foreign competition.

But outside factors can present some problems. Ongoing employment needs and continuing automation mean general shortfalls in recruitment and training, plus increased competition demands professional management. Also, trouble spots can occur, as in the impact of the stock market crash on the financial printing business.

And while printing is mostly a clean industry, recycling rules and environmental-protection legislation are having their effects.

All in all, despite occasional slumps, printing in the United States is a strong and stable industry with much promise for the future.

NOTE

ONLY THE FOLLOWING PAGES OF THIS

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